(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 22 January 2004 (22.01.2004)

PCT

(10) International Publication Number WO 2004/008457 A3

(51) International Patent Classification⁷: G11B 20/00

(21) International Application Number:

PCT/IB2003/002935

(22) International Filing Date: 23 June 2003 (23.06.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

02077902.1

17 July 2002 (17.07.2002) EF

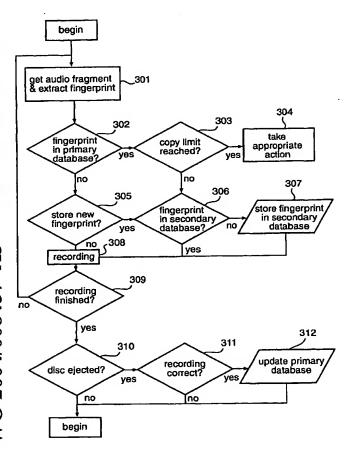
- (71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): WIRTZ, Gijsbrecht, C. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). KALKER, Antonius, A., C., M.

[NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). STARING, Antonius, A., M. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). HAITSMA, Jaap, A. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). LINNARTZ, Johan, P., M., G. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

- (74) Agent: GROENENDAAL, Antonius, W., M.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: COPY CONTROL USING DIGITAL SPEED BUMPS



(57) Abstract: A digital media recorder and a method of controlling such is shown. During attempts to copy media content such as audio or a video sequences, sub-sequences are extracted from an input media sequence. A digital finger-print of the sub-sequence is calculated and compared with at least one first reference fingerprint from a database. The outcome of the comparison determines the action to take in the further processing. Recording of the input media sequence on the media carrier is either allowed or obstructed, e.g. disallowed. In the case recording of the sequence is allowed, the database is updated with information that the digital media sequence has been recorded. This has the effect of a "speed bump," which limits the rate at which those copies of media content can be made, i.e. the effect is that of prohibiting more than a given number of copies within a given time frame.



(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR,

TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- with international search report
- (88) Date of publication of the international search report:
 3 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G11B20/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{array}{ll} \mbox{Minimum documentation searched (classification system followed by classification symbols)} \\ \mbox{IPC 7} & \mbox{G11B} \end{array}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 107 253 A (SONY CORP) 13 June 2001 (2001-06-13) paragraph '0007! - paragraph '0031! paragraph '0040! - paragraph '0065! paragraph '0225! - paragraph '0255!; figures 11,16,17,21	1–12
X	EP 1 058 257 A (SONY CORP) 6 December 2000 (2000-12-06) paragraph '0002! - paragraph '0009! paragraph '0115! - paragraph '0234!; claims; figures 5,8,13	1-12
X	US 2002/021635 A1 (HAN YONG HEE ET AL) 21 February 2002 (2002-02-21) paragraph '0009! - paragraph '0014! paragraph '0020! - paragraph '0061!; figures 1-3 -/	1–12

X Further documents are listed in the continuation of box C.	χ Patent family members are listed in annex.
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" docnent which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
21 November 2003	20/01/2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni.	Authorized officer
Fax: (+31-70) 340-3016	D'Attilia, M

C (Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	1017 35 037 02333
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 907 443 A (HIRATA NORITSUGU) 25 May 1999 (1999-05-25) column 1, line 46 -column 1, line 64 figure 5; tables 1,2	1-12

INTERNA NAL SEARCH REPORT

Interr Application No	
PCT 03/02935	

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1107253	Α	13-06-2001	JP	2001160253	A	12-06-2001
			CN	1308329	Α	15-08-2001
			EP	1107253	A2	13-06-2001
			SG	94351	A1	18-02-2003
			TW	536695	В	11-06-2003
			US	6603718	B1	05-08-2003
EP 1058257	Α	06-12-2000	AU	1801300	 A	31-07-2000
			EP	1058257	A1	06-12-2000
			CN	1298537	T	06-06-2001
			WO	0039800	A1	06-07-2000
			JP	2000305854	Α	02-11-2000
US 2002021635	A1	21-02-2002	KR	2001095714	A	07-11-2001
US 5907443	Α	25-05-1999	US	6052242	A	18-04-2000
			US	2002135921	A1	26-09-2002